Business Evaluation of the Service Components

Prime Computer Corporation

YJHW 12/89

INPUT

Business Evaluation of the Service Components

Prime Computer Corporation

Submitted to

D.R. Holding, Inc.

Prepared by

INPUT
959 Route 46 East, Suite 201
Parsippany, NJ 07054

December 1989

Table of Contents

I	Purpose of the Study	1
II	Methodology	3
III	Executive Overview	5
IV	Evaluation of Customer Satisfaction	13
V	Evaluation of Operating Efficiency	17
VI	Feasibility of Service as a Separate Business	23
VII	Feasibility of Software Support as a Separate Business	29
VIII	Recommended Valuations	31
A	Appendix: Interview Question—Outline	39
B	Appendix: Prime Personnel Interviewed	41
C	Appendix: Information Categories Requested	43
D	Appendix: Financial Models	45

Table of Contents (Continued)

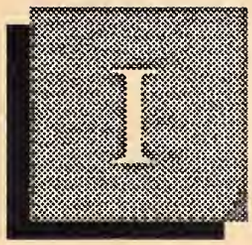
E	Appendix: Measurement/Management System	65
F	Hardware Contracts/Offerings	67
G	Software Contracts/Offerings	69
H	Accounts Receivable	71
I	Pricing	73
J	Remote Support	75
K	Logistics	77
L	Organization/Mission	79

Exhibits

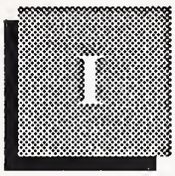
-1	Financial Projections Summary	10
-2	Customer Satisfaction	14
-3	Customer Satisfaction Compared to Other Vendors	15
-4	Key Pricing/Contracts Recommendations	20
-5	Key Efficiency Recommendations	21
-6	Key Functions	25
-7	Support Functions	26
-8	Financial Projections Summary	35
-9	Summary of Net Present Value Estimates	37

Digitized by the Internet Archive
in 2015

https://archive.org/details/businessevaluatiunse



Purpose of the Study



Purpose of the Study

D. R. Holdings Inc. has requested that INPUT prepare a business evaluation of the computer service and software support service business of Prime Computer Inc. This report includes the evaluation of the strategic and operating plans as well as the current operating environment. The purpose of the evaluation is to provide an independent third-party evaluation for use by Chemical Bank, Bank of Boston and other financial institutions that are providing financial support to D. R. Holdings Inc. in the acquisition of Prime Computer Inc.

The objectives of the evaluation are as follows:

Assessment

- Determine the operating efficiency of the service business. Assess financial results, inventory and expense controls, accounts receivable, bad debt write-offs, customer satisfaction trends, and operating and marketing plans.

- The key objectives were, first, to determine if the business plan prepared by J. H. Whitney was achievable and to identify any risks in achieving the plan. The second key objective was to identify possible improvements and changes that would result in improving the profitability and cash flow of the service business.

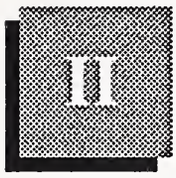
Recommend Valuations

- Recommend valuations based on review of operations, market-comparable acquisitions, stock market valuations, and present value of future cash flow plus residual value.

- Determine if Prime's service business is a distinctly separable business which could be sold as a standalone entity. If not, define what actions would be required.

- Break out valuations of hardware and software service. Determine if they can be sold combined or if they should be separated. Determine if there would be an impact on Prime's product revenue.

Methodology



Methodology

The methodology used for this study consisted of the following major activities:

1. Structured interviews were conducted with key service management personnel at the Prime headquarters locations in the Boston area, Sales and Customer Service management at two U.S. regions, Sales and Service management at Prime headquarters in France, and with the Vice President for service in Europe. Appendix A contains the questions used in the structured interviews and Appendix B contains the list of the personnel interviewed.

2. Additional information was obtained from key customer service documents and from the business plan which was prepared by J.H. Whitney and Co. Appendix C contains a list of the types of information requested and reviewed.

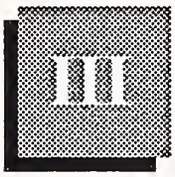
3. Secondary research was conducted at INPUT's Business Reference Library to obtain comparative information on service pricing, customer satisfaction, stock market valuations and acquisitions.

4. The information obtained above was analyzed, concerns and opportunities were identified and key recommendations were prepared. Financial models were prepared to project the anticipated results of Prime's current service strategy under the J.H. Whitney Business Plan direction as well as two additional cases which reflect the anticipated results if INPUT recommendations are implemented.

5. Recommended valuations were prepared based on the results of the information gathered as well as the various financial projections of income and expense and cash flow.

6. A written summation of findings (contained herein) was prepared, along with recommended valuations for the combined service functions as well as separate valuations for the hardware service and for the software support functions.

Executive Overview



Executive Overview

D. R. Holdings Inc. contracted with INPUT to prepare a business evaluation of the computer service and software support service business of Prime Computer Inc. The purpose of the evaluation is to provide an independent third-party evaluation for use by Chemical Bank, Bank of Boston and other financial institutions that are providing financial support to D. R. Holdings Inc. in the acquisition of Prime Computer Inc.

The major results of the evaluation are as follows:

Operating Efficiency

INPUT has concluded that the J. H. Whitney business plan, which basically represents the existing Prime customer service business strategy, is achievable. The customer service function is, in fact, slightly ahead of the plan on both a revenue and a cash flow basis at the end of the first half of 1989. Listed below are the reasons that support this conclusion:

1. In early 1988, Prime and Computervision were merged, thus creating an opportunity to gain efficiencies in the number of people required in the service function as well as in the support systems and facilities required around the world. There are still some efficiencies to be gained as a result of the merger. For example, the software support areas are still separate on a worldwide basis, and in Europe the merger of the customer service skills did not begin until the spring of 1989—so additional efficiencies are possible in the future. The J. H. Whitney business plan assumes only a 2.7% reduction in personnel below the plan projected by prior Prime management, and part of this was due to a change in the marketing strategy for Prime general purpose systems. INPUT believes the 2.7% reduction is very conservative.

2. Another factor impacting the efficiency of the customer service staff is the extremely heavy installation and warranty workload that has been placed on them. This workload is due both to a decision by manufacturing to do final assembly and integration of the products in the field, and to a shift of the Computervision order processing to the Prime order processing system. This has resulted in a significant number of incorrect products being shipped to customers, thus increasing the cost of the entire installation process. These problems have already been identified by the new management team, and INPUT believes that they will be corrected. Additional efficiencies will result.

3. Prime has almost no competition for customer service around the world. The contract cancellation rate for customers switching from a maintenance contract to time-and-material service is also very low. In fact, time-and-material service accounts for only 1% of total service revenue compared to an industry average of about 10%. Prime has a policy of not selling parts and documentation to third-party maintainers, so it is unlikely that very much revenue will be lost to third parties.

4. The overall customer satisfaction levels are consistent with industry averages, but there are some areas that require attention. These are CAD/CAM software support worldwide, general purpose software support outside the Americas, and installation time for new products.

5. The J. H. Whitney business plan reflects a reduction in marketing emphasis in the Series 50 hardware and software area. This results in a 25% per year reduction in revenues for this line of products. The effect on the service revenues in the Whitney business plan is as follows (revenue in $ millions):

	1989	1990	1991	1992	1993	1994
Revenue	255.0	237.2	215.6	192.7	170.2	148.9
Percent Change		(7.0%)	(9.1%)	(10.6%)	(11.7%)	(12.5%)

There is a delay in impacting the service revenue due to the warranty and installation period of the products already sold, but the average decrease in this revenue stream is about 10% per year. INPUT feels that this is very conservative, considering the large installed base of Series 50 customers that are, to some extent, "locked in" to this product line due to the software application investment, and the fact that these customers will need to grow as their businesses expand.

In addition, since Prime has effectively barred competitive entry by maintaining tight control over the sale of parts, diagnostics, and documentation, it has the flexibility to raise prices for this group of customers.

The service revenue projections for all products are consistent with the projected software and hardware sales and the expected replacement rate of the installed base.

The major risk to service revenues is the potential that hardware and software product sales will not materialize as planned, and this will result in lowering the service revenues about a year later. INPUT believes that this risk is offset by the potential to provide third-party maintenance on Sun Microsystems products. Prime has the skill, the documentation, the parts, and the parts repair facilities to pursue this business opportunity. This opportunity is being actively pursued by the new management team.

During the evaluation process INPUT identified improvements and changes with the potential to improve cash flow and profitability above that in the J. H. Whitney business plan. These are in two major areas as follows:

- Pricing and Contracts
- Efficiencies

In the pricing and contracts area, INPUT believes that an opportunity exists to increase revenue and profits through increasing overall price levels to Prime's service customers. Prime has almost no third-party maintenance competition, a very small percent of customers taking time-and-material service, and it has no significant pressure on service prices from prospects and customers who are evaluating the total cost of ownership of Prime products versus those of competitors. Pricing is not a key issue with Prime service customers, and Prime's price levels appear to be midrange compared to other vendors.

In addition to the overall pricing opportunity described above, INPUT believes that an additional profit opportunity exists by withdrawing certain offerings. Prime offers its customers a granular service menu which provides a discount for lower levels of service. In the hardware maintenance area, they offer a 20% discount for customers willing to accept next-day service. There is little or no cost justification for this discount, and INPUT believes that most of these customers are actually getting same day service, but are paying less for it. In the software support area, a similar concept is in place, except the line is drawn between remote support and on-site support.

INPUT believes that these BASIC options should be withdrawn, thus providing an instant price increase. In addition, the overall level of Prime's service prices should be increased. There are some customer satisfaction problems in the software support area that should be corrected prior to increasing those prices, and the timing of the general increases will have to be carefully coordinated with the withdrawal of the BASIC options.

Efficiency recommendations include better data collection through 100% time recording for Prime's service personnel, additional measurements in the areas of product management and profitability, parts availability and productivity. Organizational efficiencies are recommended that merge certain functions and eliminate others.

Recommended Valuation

INPUT developed three business case models which describe and project the following cases:

Case 1

Case 1 represents the J. H. Whitney business plan projection adjusted for actual first six month 1989 results. This represents a reasonable projection of Prime's current strategy. The 2.7% reduction in manpower can easily be achieved through completion of the integration and cross-training of Computervision and Prime internationally. The downside risk in service revenue due to reduced product sales will be offset by the third-party maintenance revenue opportunity on the Sun platforms.

Recommended Valuation: $677.9 million

Case 2

Case 2 represents the implementation of INPUT's pricing and contract recommendations which are described in Chapter IV added to Case 1. The pricing/contract recommendations will have to be phased in and the basic option elimination timed carefully with the price increases. Therefore the following incremental revenue increases by year are included in Case 2:

1990	1991 on
+4%	+8%

Recommended Valuation: $792.2 million

Case 3

Case 3 represents the implementation of the INPUT efficiency recommendations described in Chapter IV, in addition to the Case 2 pricing recommendations. The efficiency recommendations must be phased in. For purposes of the model, all of the savings were assumed to be in reduced personnel requirements. The percent reduction in personnel requirements in the Case 3 model is as follows:

	1990	1991 on
Field	-3%	-10%
Support (Core)	-1%	-10%

Recommended Valuation: $837.7 million

All cases assume that the residual value at the end of 1994 will equal 75% of the 1994 revenue (Cases 1, 2 and 3).

Exhibit 1 displays for all three cases, the revenue, net income after tax, cash flow, and net present value of the cash flow generated.

INPUT believes that the net cash flow projections in all three cases are achievable and conservative. Prime can continue to earn the historical profits for service and they can be improved. Case 2 and Case 3 are based on the assumption that the recommendations made by INPUT in this study will be implemented. Since all of these may not be implemented, INPUT recommends that the valuation be the average of the Case 1 and the Case 3 models, which is $757 million. This valuation is based on the assumption that the product business and service business will be run together as a unit.

EXHIBIT-1

Financial Projections Summary

Worldwide Customer Service Hardware and Software

	$ Millions					
	1989	1990	1991	1992	1993	1994
CASE 1						
Revenue	576.0	592.1	608.8	629.9	658.1	695.8
Net income (after tax)	83.1	88.2	91.6	95.1	99.3	104.6
NIAT (Percent)	14.4	14.9	15.0	15.1	15.1	15.0
Cash flow	93.1	92.8	90.6	80.3	70.2	98.3
Net present value	677.9					
CASE 2						
Revenue	576.0	615.8	657.5	680.3	710.8	751.4
Net income (after tax)	83.1	102.8	121.6	126.1	131.7	138.8
NIAT (Percent)	14.4	16.7	18.5	18.5	18.5	18.5
Cash flow	93.1	104.9	118.0	111.2	102.4	132.2
Net present value	792.2					
CASE 3						
Revenue	576.0	615.8	657.5	680.3	710.8	751.4
Net income (after tax)	83.1	106.2	134.4	139.4	145.6	153.5
NIAT (Percent)	14.4	17.3	20.4	20.5	20.5	20.4
Cash flow	93.1	107.7	139.9	124.8	116.7	147.4
Net present value	837.7					

It is possible to sell the service business in a number of different ways, as follows:

1. To achieve the highest value, the service business should be sold with the product business. The presence of an in-house service organization enhances the product sales for both hardware and software. It is therefore more valuable to the acquiring company.

MAI/Basic Four demonstrated this when it paid a premium to buy back the service organization that serviced its products from Sorbus in early 1988. It demonstrated it again recently when it made a bid of $525 million for the Prime Series 50 product and service business.

2. Another alternative would be to sell the service business separately from the product business, but as part of the sale, the purchaser would be granted the exclusive rights to provide service for Prime hardware and software products. If the service function is offered for sale, it will bring a higher price if the exclusive right to service Prime products is part of the sales agreement.

   There are several third-party maintenance companies in the United States that have exclusive rights to service certain vendors' products, and as a result they usually can achieve higher profits through higher prices when these exclusive arrangements are in effect. For example, Sanyo/Icon recently named McDonnell Douglas Field Service Company the exclusive maintenance supplier for its products. Dell Computer has a similar agreement with Xerox. While some of these arrangements include the on-site support of both the hardware and the software, most of them are for the hardware support, and certainly the vast majority of the revenue comes from the support of the hardware.

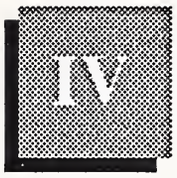
   Software support should be bundled with the license fee if possible, to avoid adverse selection and to assure full cost recovery. Under the Prime strategy to implement an up-front plus a monthly fee which includes support, the software support functions could be sold and a contract made between Prime and the purchasing company to support the Prime software products for a fee. INPUT is not aware of any sales or contracts of this type, so the concept may not be attractive to would-be purchasers.

   INPUT believes that the value of this alternative could be as much as 10% lower than alternative number one, or about $681 million. The value could also be higher since this large customer service group would be attractive to third-party maintenance companies like Sorbus (a Bell Atlantic subsidiary) and TRW Customer Service, because of the high profit margins that come with the exclusive right to service, and the efficiencies gained by merging the two similar businesses. Other likely candidates that would be willing to pay a premium are European and Japanese companies that need to rapidly establish a service presence in the United States and other parts of the world to support their products.

3. A third alternative would be to sell only the hardware service business with the exclusive right to service and to retain the software support business, or sell it in conjunction with the software business. This might be an attractive alternative in the future if the General Systems business fades away and Prime becomes more of a software vendor by utilizing other vendors' hardware platforms.

The valuations contained in this report represent INPUT's best efforts based upon the information available to INPUT. INPUT has relied upon the accuracy of this information in making its evaluation and has attempted to verify this information where possible and practical. INPUT does not warrant the accuracy of this information however, and inaccuracy of the information could affect the conclusions reached in this report.

Evaluation of Customer Satisfaction



Evaluation of Customer Satisfaction

Information on customer satisfaction with hardware maintenance and software support from Prime was obtained by examining the results of the surveys conducted by Prime, the results of outside surveys which compare Prime with other vendors, and the results of the interviews conducted with Prime personnel by INPUT.

Exhibit 2 displays summary customer satisfaction information from the Prime surveys for the Americas, Europe and the Asia-Pacific region.

Hardware maintenance satisfaction has improved slightly over the past few years and is at a 95.9% level. Prime uses a four-point scale and the top two levels are considered satisfied. INPUT uses a different method to calculate satisfaction, and it shows a significant improvement in satisfaction for hardware maintenance between 1988 and 1989.

The percent of users satisfied with software support has remained about the same for the past few years at the 83% level. There is a significant difference in the satisfaction with software support between the General Purpose Systems (87.4%) and the CAD/CAM Systems (67.7%). The CAD/CAM support center call-back time to customers is nearly 24 hours, as the support center attempts to handle a 40% increase in calls in the past year. Only 50.4% of the CAD/CAM users are satisfied with the problem resolution time.

EXHIBIT-2

Customer Satisfaction

	Percent Satisfied		
	1987	1988	1989
Americas			
Prime survey	93.4	93.9	95.9
Hardware maintenance	83.2	82.8	83.3
Software support			87.4
- General Purpose			67.7
- CAD/CAM			

Europe (1988)	Hardware Maintenance	Software Support
U.K.	89	70
France	82	81
Germany	86	72
Italy	88	67

Asia-Pacific

- Hardware maintenance consistent with U.S.
- Software support
  - General Purpose lower than Americas
  - Computervision much lower

A significant problem exists in the time required to install new systems and software, and this has become a customer satisfaction issue. The problem is apparently due to a plan to shift final assembly and test to the field in order to meet very tight quarterly objectives for product shipments.

Customer satisfaction in Europe is lower than in the Americas for both hardware service and software support. Customers are dissatisfied with installation time and the receipt of the proper materials and equipment at installation time. There is also a problem in Europe with obtaining software fixes for General Purpose Systems in a timely manner from the United States.

Customer satisfaction with hardware maintenance in the Asia-Pacific region is consistent with that in the Americas, while the software support is lower. The CAD/CAM software support satisfaction is much lower than in the Americas.

A comparison of customer satisfaction between Prime general purpose systems and other vendors systems in the Americas is displayed in Exhibit 3.

EXHIBIT-3

Customer Satisfaction Compared to Other Vendors

General Purpose Systems

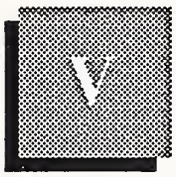
Americas	Satisfaction Scale 1-10	
	Prime	All Vendors
INPUT (1989)		
- Hardware maintenance overall	8.3	8.5
- Software support overall	8.3	8.4
Data Pro (1988)		
- Maintenance service efficiency	8.4	8.7
- Software support	6.8	7.5
Prognostics (1989)		
- Response time	8.5	8.4
- Repair time	8.4	8.3
- Software problem support	7.6	7.1

This information was obtained from three outside surveys conducted in 1988 and 1989. All three surveys asked users to rate their satisfaction on a scale of 1 to 10, with 10 being the highest level of satisfaction.

Prime customer satisfaction was very close to the industry average in all three surveys. Satisfaction with software support was about the same as hardware maintenance in the INPUT survey, but lower in the other two surveys.

In summary, the overall satisfaction levels are consistent with industry averages, but there are some areas that require attention. These are CAD/CAM software support worldwide, General Purpose software support outside the Americas, and installation time for new products.

Evaluation of Operating Efficiency



Evaluation of Operating Efficiency

The J. H. Whitney evaluation of Prime resulted in the conclusion that the Prime business plan for customer service was basically sound; therefore the only adjustment planned was a 2.7% reduction in personnel. This was justified by the reduced product volumes resulting from the reduced new-account marketing effort in the General Systems area, and by the savings possible through the completion of the cross-training and integration efficiencies resulting from the merger of the Prime and Computervision service functions around the world.

The key objectives of INPUT's evaluation were, first, to determine if the J. H. Whitney business plan was achievable and to identify any risks in achieving the plan. The second key objective was to identify possible improvements and changes that would result in improving the profitability and cash flow of the service business.

INPUT placed emphasis on gathering data and information in the following areas which, if managed properly, are key to achieving high profitability and cash flow in the service business area.

- Contracts and Offerings
- Pricing
- Measurement/Management System
- Accounts Receivable
- Remote Support
- Logistics
- Organization

INPUT has concluded that the J. H. Whitney business plan which basically represents the existing Prime business strategy is achievable. The customer service function is in fact slightly ahead of the plan on both a

revenue and a cash flow basis at the end of the first half of 1989. Listed below are the reasons that support this conclusion:

In early 1988 Prime and Computervision were merged, creating an opportunity to gain efficiencies in the number of people required in the service function, as well as in the support systems and facilities required around the world. The American organization started early in 1988 to capture these efficiencies, but the International organization did not start until around March 1989. As a result, there have been significant reductions in manpower in the Americas, and very small reductions in the International organization. The software remote support groups are still organized as two groups, and the I/S systems to support customer service are still in the process of being combined. In summary, there are still some efficiencies to be gained as a result of the merger.

Another factor that is affecting the efficiency of the customer service staff is the extremely heavy installation and warranty workload that has been placed on them. This workload is due both to a decision by manufacturing to do final assembly and integration of the products in the field, and to a shift of the Computervision order processing to the Prime order processing system. This has resulted in a significant number of incorrect products being shipped to customers, thus increasing the cost of the entire installation process. These problems have been identified by the new management at Prime, and INPUT believes that they will be corrected and therefore result in additional efficiencies.

Prime has almost no competition for customer service around the world. The contract cancellation rate is also very low for customers going to time-and-material service. In fact, time-and-material service accounts for only 1% of total service revenue. Prime has a policy of not selling parts and documentation to third-party maintainers, so it is not likely that very much revenue will be lost to third parties.

The major risk with the plan is the possibility that hardware and software product sales will not materialize as planned; this will result in lowering the service revenues about a year later. INPUT believes that this risk can be offset by the potential to provide third-party maintenance on Sun Microsystems products. Prime has the skill, the documentation, the parts, and the parts repair facilities and skills to pursue this business opportunity. This opportunity is being actively pursued by the new management team.

As a result of the evaluation of the major areas, INPUT has concluded that the potential exists for Prime to improve the profitability and cash flow projected in the J. H. Whitney business plan. These recommendations have been divided into two major categories as follows:

- Pricing/Contracts
- Efficiency

In the pricing and contracts area, INPUT believes that an opportunity exists to increase revenue and profits through increasing overall price levels to Prime's service customers. Prime has almost no third-party maintenance competition, a very small percent of customers taking time-and-material service, and no significant cost-of-ownership pressures. Pricing is not a key issue with Prime service customers, and Prime's price levels appear to be midrange compared to other vendors.

Prime provides its customers with a granular service menu which offers a discount for lower levels of service. In the hardware maintenance area it offers a 20% discount for customers willing to accept next-day service. There is little or no cost justification for this discount, and INPUT believes that most of these customers are actually getting same day service, but paying less for it. In the software support area, a similar concept is in place, except the line is drawn between remote support and on-site support.

INPUT believes that these BASIC options should be withdrawn, thus providing an instant price increase. In addition, the overall level of Prime's service prices should be increased. There are some customer satisfaction problems in the software support area that should be corrected prior to increasing those prices, and the timing of the general increases will have to be carefully coordinated with the withdrawal of the BASIC options.

Efficiency recommendations include better data collection through 100% time recording for Prime's service personnel, additional measurements in the areas of product management and profitability, parts availability, and productivity. Organizational efficiencies that merge certain functions and eliminate others are recommended.

Exhibit 4 provides a summary of the key pricing/contract recommendations and Exhibit 5 provides a summary of the efficiency recommendations. Detailed background information supporting these recommendations is contained in Appendix sections E - L.

EXHIBIT-4

Key Pricing/Contracts Recommendations

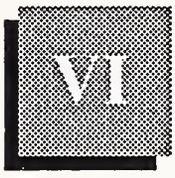
- Eliminate the BASIC contract option for hardware maintenance
- Eliminate the BASIC option for software support and offer full support as part of the monthly license fee and the up-front license fee strategy
- Separately price new functions in new releases
- Extend warranties to one year on-site for all hardware
- Implement price increases
  - Hardware as necessary to recover extended warranty
  - Hardware maintenance worldwide 5%
  - General Purpose software support, Americas 7%
  - CAD/CAM software worldwide (later) 7%
  - General Purpose software outside Americas (later) 7%

EXHIBIT-5

Key Efficiency Recommendations

- Implement 100% time reporting for field and support center personnel
- Implement product management concept for warranty, software support costs, installation, and engineering change costs
- Implement a parts availability measurement at the branch office level
- Implement productivity measurements
- Track maintenance profitability by product
- Change key measurement system to put more emphasis on customer satisfaction and to optimize overall Prime business rather than just Customer Service
- Move Logistics and Core Services to the Customer Service organization
- Eliminate the East/West operations function in the U.S.
- Merge the Levels 1 and 2 software support groups for General Systems and CAD/CAM. These groups provide telephone assistance to both Prime customers and Prime customer service representatives
- Assign the mission for Levels 1 and 2 General Systems software support outside the U.S. to the U.S. Technical Support Center
- Implement mission, organization, and resource changes to improve software support in the CAD/CAM area worldwide
- Implement geographic symmetry and shared facilities with sales to the regional and, if possible, to the branch office level

Feasibility of Service as a Separate Business



Feasibility of Service as a Separate Business

The customer service business at Prime consists of two major offerings—hardware maintenance and software support. The delivery of service under both offerings is from the same organization within Prime. In the Americas the customer service line organization reports to the head of the America business unit. There is a similar organization in each major country outside the Americas.

The support for the line service organization comes from two major areas, the Logistics organization and the Core Services organization. Currently, logistics reports to corporate manufacturing, and Core Services reports to corporate development. Core Services consists of planning, education, CAD/CAM support and General Purpose systems hardware and software support. Logistics is responsible for the worldwide parts logistics and parts repair function.

INPUT believes that it is clearly possible to separate and sell the service function as a separate business. There are several third-party maintenance companies in the United States that have exclusive rights to service certain vendors' products; as a result they can usually achieve higher profits through higher prices when these exclusive arrangements are in effect. While some of the arrangements include the on-site support of both the hardware and the software, most of them are exclusively for hardware support, and the vast majority of the revenue from such arrangements comes from hardware support. If the service function is offered for sale, it will bring a higher price if the exclusive right to service Prime products is part of the sales agreement.

It is possible to offer an exclusive right to service Prime products because Prime has maintained a very restrictive set of policies regarding third-party maintenance companies—it will not sell the parts or documentation needed to service the products. As a result, Prime has almost no competition for the service of its products. There is an opportunity for third-party entry in Prime products that use the Sun platform, but no significant competition has developed to date.

Software support as a separate third-party business has not yet proved to be a viable concept. Many companies, including IBM, have separately priced software support for the past twelve years, but no viable third-party offerings exist. In 1987, IBM rebundled software support with the software license fees.

Although it is possible to sell the service function, the lack of in-house service and support would have significant impact on product sales for both hardware and software.

- Sales is dependent on Service for product sales

But also—

- Service is dependent on Sales for additional installed products to service

INPUT believes that the optimum timing for selling the service function would be when and if the product strategy was to harvest the business.

In summary, while the sale of the hardware service business is practical, an independent software services business may not be a viable business concept for the purchaser. The timing of the sale is dependent on Prime's product strategy, because the loss of a dedicated service function will result in a loss of product sales.

If a decision is made to separate and sell the service function, certain actions will be required to establish an independent and self-sufficient business. Exhibit 6 displays the key functions in Prime's computer business, to whom they report under the existing organization, and how the cost recovery system works. The main concern revealed by this exhibit is that customer service is responsible for physical installation planning, installation, engineering changes, software fixes, and warranty service, but receives no revenue or expense credit to their income and expense statement for rendering this service. This will obviously have to be corrected if the service function is separated and sold.

Exhibit 7 displays the various functions that are required to support a viable service organization, and those responsible for these functions in both the USA and in Europe.

EXHIBIT I-6

Key Functions

	Responsible		Revenue Credit	
	USA	Europe	Hardware	Software
Design products	M/E	M/E		
Plan service/support	CS	CS		
Manufacture	M/E	M/E		
Design engineering changes/ software fixes	M/E*	M/E*		
Physical installation planning	CS	CS	P	P
Install products	CS	CS	P**	P
Install/provide engineering changes/software fixes	CS	CS	P	CS
Warranty service	CS	CS	P***	CS
Maintain/Repair	CS	CS	CS	CS
Customer support (how to ?s)	CS	CS	CS	CS
Upgrade/downgrade	CS	CS	CS	CS
Relocate	CS	CS	CS	CS
Marketing support (pre-sales)	S	S		
Sales (products & services)	S	S		
Customer education	S	S		
Consulting	C/Sys	S		

Legend:

M/E Manufacturing/Engineering
CS Customer Service
S Sales/Marketing
C/Sys Custom Systems
P Product

* Design software fixes for CAD/CAM software assigned to CS organization

** Initial install only; add-on products install revenue goes to CS plus all new systems (6000, 4000, etc.) install revenue goes to CS

*** 3.3% of purchase price expense relief to CS on Computervision products U.S. only.

EXHIBIT-7

Support Functions

	Responsible	
	USA	Europe
Billing/contract administration	F&A	CS
Accounts receivable	F&A	S
Logistics (function and IS systems)	M/E	M/E
Dispatching	CS	CS
Problem management	CS	CS
Legal	Hdq	Hdq
Documentation delivery/support	M/E	M/E
Call reporting	CS	CS
Link to product order processing/shipment	F&A	F&A
Service education	CS	CS
Accounting	F&A	F&A
Personnel	CS	Hdq
Pricing	F&A	F&A
Accounts payable	F&A	F&A
Payroll	F&A	F&A

Legend:

M/E	Manufacturing/Engineering
CS	Customer Service
S	Sales/Marketing
F&A	Finance & Administration
Hdq	Headquarters

INPUT believes that the following actions are required to separate and sell the service business:

- Cost-recovery or revenue procedures should be put in place to charge back to products:

  - Physical installation planning
  - Installation
  - Installation of engineering changes/software fixes
  - Warranty

- CAD design of software fixes should be moved back to manufacturing/ engineering.

- Logistics and Core Services should be moved into the Customer Service organization.

- The following separate support functions should be established for Customer Service:

  - Billing/Contract administration
  - Accounts receivable
  - Legal
  - Accounting
  - Personnel
  - Pricing
  - Accounts payable
  - Payroll

- A separate marketing and sales function should be established for Customer Service.

- Outside the U.S., separate service companies should be established if required by law. The changes planned for Europe in 1992 may reduce the number required.

Feasibility of Software Support as a Separate Business

Feasibility of Software Support as a Separate Business

Software vendors have found that the following major support functions are required in order to obtain a reasonable level of user satisfaction with their products:

- Defect identification
- Defect correction/updates
- Responding to "How to" questions
- Identification of user problems
- Documentation updates
- User training

User training is typically separately priced if classroom or on-site training is required. The other items of software support are either bundled with the license fee or they are grouped together as a software support offering and separately priced.

In order to understand the best approach to a software service offering, it is important that the following characteristics of software support and its environment be understood:

- Software problems are due to design error or lack of customer knowledge on how to use the software. Software does not wear or experience component failure similar to hardware.

- Design errors occur early in the product or version life cycle.

- Application user errors peak early in the installation and use cycle for each user.

- Correction of design errors can best be handled by the group that designed the product.

- Third-party software support has not developed as a viable business.

- DEC has an offering which provides telephone and remote support for software companies. Acceptance has been poor to date.

Conclusion

- Software support should be bundled with the license fee if possible, to avoid adverse selection and to assure full cost recovery.

- Under the Prime strategy to implement an up-front plus a monthly use fee which includes support, the software support could be sold and a contract made with the purchasing company to support the Prime software products for a fee.

- The lack of an in-house software support function would impact:

  - The marketing of the software products
  - The level of knowledge of customer needs in the marketplace
  - The total profit dollars from software

In summary, it is possible to sell software support separate from the software product, but it probably should not be done unless the software product strategy is an end-of-life or end-of-business strategy.

Recommended Valuations

Recommended Valuations

Introduction

Three separate approaches were examined to determine the value of Prime's service businesses.

- Comparable public companies (stock market valuation)
- Comparable acquisitions
- Discounted cash flow (DCF)

In the end, INPUT relied most heavily on the analysis provided by discounted cash flows. As compared with the other approaches, DCF has the following advantages:

- Uses data specific to the situation
- Allows analysis and testing of alternatives
- Does not rely on analogies or comparisons that are only partially relevant
- Is not distorted by significant differences between the subject company and "comparable" situations.

In attempting to find comparable situations, there are two major problems:

- A lack of independent public companies comparable in size to Prime's service business
- Lack of public disclosure of the terms of most acquisitions in this field

Public Company (Stock Market) Comparisons

There is only one large public company in the service business: Intelogic Trace (IT). Any analysis of IT's results is complicated by the significant losses which IT has reported in its investment portfolio over the past several years. The price/earnings multiples associated with the Edeleman group's acquisitions in 1988, as well as the current low market P/E (approximately 5x) reflect this confusion over the real business identity of IT.

In addition, the inherent value of Prime's business is higher than that of IT. Prime's service business supports the product marketing effort of a large parent company, and there is little or no competition for Prime's large captive service base. Prime's service business generates a much higher after-tax profit (approximately 15%) as compared with the IT profit of approximately 5% on sales. Finally, there are clearly identified opportunities for improvement in Prime's service operation, including those planned by J.H. Whitney and additional items recommended by INPUT.

While there are other large service organizations which are part of public companies—notably the Sorbus subsidiary of Bell Atlantic—the operating results of these subsidiaries are not publicly reported, and any analysis of their cost of funds, return on assets, etc. would be complicated by the operating characteristics of other parts of the parent corporation, as well as intracorporate transfer pricing considerations.

Comparable Acquisitions

The great majority of M&A transactions in this industry are small companies being acquired by much larger public companies. Since these acquisitions are not "material" by GAAP guidelines, there is no legal requirement that the terms of the acquisitions be publicly reported, and almost none of them are.

In its search for comparables, INPUT reviewed its own proprietary industry files and consulted a number of public data bases. Among the public sources used were the DIALOG on-line information system, the Mergers & Acquisitions journal, and the M&A Data Base, an on-line directory of completed mergers and acquisitions offered by ADP Network Services.

A search of the M&A Data Base uncovered 27 acquisitions since 1985 in which the primary business of the acquired operation was computer service-related. Of these, however, only seven had publicly reported acquisition values. Four of these seven were not relevant, as they represented highly specialized service capabilities such as the depot repair of disk drive read/write heads, or were partial-interest portfolio acquisitions

rather than operating company acquisitions. One of the remaining three was too old to be relevant (the original Bell Atlantic acquisition of Sorbus in January 1985), and the remaining two had been subsidiaries of larger companies which did not separately report the operating results of these subsidiaries. Similar difficulties were encountered in searches of other data sources.

The only reasonably comparable acquisition was the January 1988 transaction in which MAI/Basic Four reacquired the servicing of its own hardware from Sorbus. In a deal which was initiated before the October 1987 stock market crash, MAI paid over 1-1/3 times estimated revenues, or an estimated P/E of 29, to create some of the captive market advantages enjoyed by the Prime service organization. In this case, the value of the MAI service business to MAI was greater than it was to Sorbus, justifying the uniquely high multiples on revenues and earnings.

Summary

In the end, INPUT determined that comparable acquisitions was not a fruitful approach to the valuation of Prime's service business. Given the previously noted difficulty of establishing comparability between IT and Prime, the comparable public company (stock market) valuation approach was also found to be of little value. Hence the emphasis placed on DCF analysis.

Key Assumptions
Discounted Cash Flow Models

INPUT developed three business case models which describe and project the following cases:

- Case 1 represents the J. H. Whitney business plan projection adjusted for 1989 going rates. This represents a reasonable projection of Prime's current strategy. The 2.7% reduction in manpower can easily be achieved through completion of the integration and cross-training of Computervision and Prime personnel internationally. The downside risk to service revenue due to reduced product sales will be offset by the third-party maintenance revenue opportunity on Sun platforms.

- Case 2 represents the implementation of INPUT's pricing and contract recommendations which are described in Chapter IV. The pricing/contract recommendations will have to be phased in and the BASIC option elimination timed carefully with the price increases. Therefore the following incremental revenue increases by year are included in Case 2:

1990	1991 on
+4%	+8%

- Case 3 represents the implementation of the INPUT efficiency recommendations described in Chapter IV, in addition to the Case 2 pricing recommendations. The efficiency recommendations must be phased in. For purposes of the model, all of the savings were assumed to be in reduced personnel requirements. The percent reduction in personnel requirements in the Case 3 model is as follows:

	1990	1991 on
Field	-3%	-10%
Support (Core)	-1%	-10%

All cases assume that the residual value at the end of 1994 will equal 75% of the 1994 revenue (Cases 1, 2 and 3).

Income and Cash Flow Projections

Exhibit 8 displays for all three cases, the revenue, net income after tax, cash flow, and net present value of the cash flow generated, including the assumption that the residual value at the end of 1994 will equal 75% of the 1994 revenue.

INPUT believes that these projections represent a conservative estimate of the value of the Prime service function because, as outlined in Chapter VI, Prime customer service does not receive any expense credit or revenue for services which they render in support of software and hardware product sales. In other words, the existing Prime income and expense statements understate the profitability of the service offerings and overstate the profitability of the product offerings.

Prime customer service has a history of having a stable and growing revenue stream and high profitability. INPUT believes that the major downside risk is the continued weakness of Prime product and software sales. This risk is offset by the third-party maintenance opportunity on the Sun platform. There is significant potential opportunity on the upside by implementing the recommendations included in Case 2 and Case 3.

EXHIBIT-8

Financial Projections Summary

Worldwide Customer Service Hardware and Software

	$ Millions					
	1989	1990	1991	1992	1993	1994
CASE 1						
Revenue	576.0	592.1	608.8	629.9	658.1	695.8
Net income (after tax)	83.1	88.2	91.6	95.1	99.3	104.6
NIAT (Percent)	14.4	14.9	15.0	15.1	15.1	15.0
Cash flow	93.1	92.8	90.6	80.3	70.2	98.3
Net present value	677.9					
CASE 2						
Revenue	576.0	615.8	657.5	680.3	710.8	751.4
Net income (after tax)	83.1	102.8	121.6	126.1	131.7	138.8
NIAT (Percent)	14.4	16.7	18.5	18.5	18.5	18.5
Cash flow	93.1	104.9	118.0	111.2	102.4	132.2
Net present value	792.2					
CASE 3						
Revenue	576.0	615.8	657.5	680.3	710.8	751.4
Net income (after tax)	83.1	106.2	134.4	139.4	145.6	153.5
NIAT (Percent)	14.4	17.3	20.4	20.5	20.5	20.4
Cash flow	93.1	107.7	139.9	124.8	116.7	147.4
Net present value	837.7					

Recommended Valuation

INPUT believes that the net cash flow projections in all three cases are achievable and conservative. Prime can continue to earn the historical profits for service, and these profits can be improved. Case 2 and Case 3 are based on the assumption that Prime will implement the recommenda-

tions made by INPUT in this study. Since all of these may not be implemented, INPUT recommends that the valuation be the average of the Case 1 and the Case 3 models, which is $757,000,000.

This valuation is based on the assumption that if the service business is sold, it will be sold with the product business. If the service business is sold separately and the purchaser is granted the exclusive rights to provide service for Prime hardware and software products, INPUT believes that the value could be reduced by as much as ten percent. However, the value could also be higher, since this large customer service group would be attractive to third-party maintenance companies like Sorbus (a Bell Atlantic subsidiary) and TRW Customer Service because of the high profit margins that come with the exclusive right to service and the efficiencies gained by merging the two similar businesses. Other likely candidates that would be willing to pay a premium are European and Japanese companies that need to rapidly establish a service presence in the United States and other parts of the world to support their products.

The valuations contained in this report represent INPUT's best efforts based upon the information available to INPUT. INPUT has relied upon the accuracy of this information in making its evaluation and has attempted to verify this information where possible and practical. INPUT does not warrant the accuracy of this information however, and inaccuracy of the information could affect the conclusions reached in this report.

INPUT was asked to develop separate valuation projections for the Prime hardware maintenance and the Prime software support business. These separate valuations were requested in the event that a decision was made to sell the hardware maintenance business, but to keep the software support business.

Exhibit 9 presents a summary of the net present value for the hardware maintenance and software support businesses separately. These projections were prepared by working with Prime accounting personnel and developing a revenue and expense allocation for the second quarter of 1989 in the American business unit. The ratios obtained were then applied to the worldwide financial models discussed above, to obtain a separate model for hardware maintenance and software support. Revenue and expense allocation information was not available for international operations, but the resulting models should represent reasonable projections.

EXHIBIT-9

Summary of Net Present Value Estimates

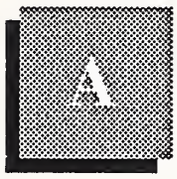
	Net Present Value ($ Millions)		
	1987	1988	1989
Hardware and software support	677.9	792.2	837.7
Hardware maintenance	503.2	586.3	618.1
Software support	174.7	205.9	219.5

Totals may not add due to rounding.

APPENDIX D contains more detailed information from the financial models of income and expense and cash flow. This information is provided for Cases 1, 2 and 3 Worldwide Customer Service for the following:

- Hardware maintenance and software support
- Hardware maintenance
- Software Support

Appendixes



Appendix: Interview Question Outline

Interview Question Outline

1. Please give me an overview of your organization.

   How you are organized?
   What geographic territory do you cover?
   Who are your key customers?
   How many customers do you serve?
   How many people are in your service organization?
   How do you handle technical support?
   How do you handle off-hour calls?
   How do you handle software support to your users?

2. What measurements of customer satisfaction do you have and how are you doing?

3. What measures of employee satisfaction do you have and how are you doing?

4. How are you being measured to determine your performance on the job (i.e., Service Executives)?

5. How do you control the security of your parts inventory and your parts returns?

6. How well is the parts logistics system working?

7. What is the trend in service contract cancellations and what are the reasons for these cancellations?

8. Who are your principal competitors and what are their strengths and weaknesses?

9. How do you set prices on service contracts for hardware and software?

10. What is your plan for the remainder of 1989? What about 1990?

11. What are the key inhibitors of growth of revenue?

12. How do your prices compare with competition? How do your customers feel about your prices?

13. How do you handle engineering changes and software updates for your customers? How are these programs working?

14. What has been the trend during the past two years in service revenues and costs?

15. What is the status of your manpower vs. your workload? How do you determine this?

16. What is the attrition record in your area of responsibility?

17. What backlog of calls do you normally start the day with per FSR?

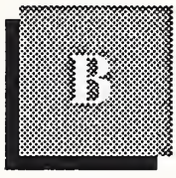
18. What is the average number of calls per day per FSR?

19. What is your major concern today in the customer service area?

20. How do you identify prospective customers and how do you market to them?

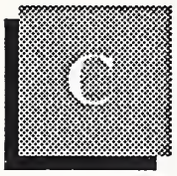
If possible I would like to tour your facilities, including your parts center and dispatch center.

I would like a copy of your service contract documents and copies of the various discounting or pricing options available to your customer for service



Appendix: Prime Personnel Interviewed

1.	Ken Tarpey	Vice President Planning and Education
2.	Brian Skedd	Vice President CAD/CAM Software Support
3.	Walter Reitz	Director General Purpose Systems Support
4.	Jason Silvia	Vice President Service, Americas
5.	Bill Foniri	Vice President Service, Far East
6.	Carl Derycke	Vice President Service, Europe
7.	Al Grady	Regional Director, Service, Northeast
8.	Ted Eaton	Regional Director, Sales, Northeast
9.	Wayne Zurmely	Branch Service Manager, Seattle
10.	John Murphy	Vice President, Logistics
11.	Bob Murphy	Finance Manager, Logistics
12.	Steve Saucy	Regional Director, Sales, Northwest
13.	Shiv Verma	Senior Manager, Business Policy and Practices
14.	Jack Lane	Director Human Resources, Americas and Core
15.	P. M. Janot	Directeur des Services, France
16.	Jacques Dumas	President Directeur General, France



Appendix: Information Categories Requested

U.S. and Non-U.S. Separate

1. Income and expense for past two years by year
2. Income and expense by month for past 12 months
3. Parts inventory by month for two years
4. Parts inventory variance for two years (book versus physcial)
5. Description of parts distribution network
6. Description of parts availability issues with suppliers
7. Parts inventory write-off for obsolescence for two years. Include a description of methodology used.
8. Attrition rates (two years)
   - Customers (# contracts, total value)
   - Customer engineers (two years)
   - Managers
9. Terms and value of each outstanding employment contract
10. Product service inventory trends/major product for two years
11. Latest operating plan projections
12. Description of any existing support contracts with manufacturers, and estimated dollar value

13. Warranty expense by product

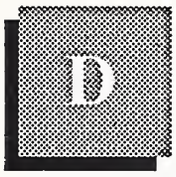
14. Engineering change backlog

15. Software update backlog

16. Copy of service contracts

    - Hardware service
    - Software support

17. Summary data of recent customer satisfaction surveys



Appendix: Financial Models

EXHIBIT D-1

Service Revenue by Major Product

	$ Millions					
	1989	1990	1991	1992	1993	1994
Case 1						
Prime Series 50	255.0	237.2	215.6	192.7	170.2	148.9
CADDS (large CAD)	231.5	254.7	280.1	308.2	338.9	372.9
Medusa (small CAD)	65.0	68.3	71.7	75.2	79.0	83.0
Other	24.5	31.9	41.4	53.8	70.0	91.0
Total	576.0	592.1	608.8	629.9	658.1	695.8
Case 2 and Case 3						
Prime Series 50	255.0	246.7	232.8	208.1	183.8	160.8
CADDS (large CAD)	231.5	264.9	302.6	332.8	366.1	402.7
Medusa (small CAD)	65.0	71.0	77.4	81.2	85.3	89.6
Other	24.5	33.2	44.7	58.1	75.6	98.3
Total	576.0	615.8	657.5	680.2	710.8	751.4

EXHIBIT D-2

Income and Expense
Worldwide Customer Service
Case 1

	$ Millions					
	1989	1990	1991	1992	1993	1994
Revenue	576.0	592.1	608.8	629.9	658.1	695.8
Expenses (total)	336.2	345.6	355.3	367.6	384.1	406.0
- People	171.6	176.4	181.3	187.6	196.0	207.2
- Logistics	119.6	122.9	126.4	130.7	136.6	144.4
- Facility	20.9	21.4	22.0	22.8	23.8	25.2
- Other	24.2	24.9	25.6	26.4	27.6	29.2
Gross margin	239.9	246.6	253.5	262.3	274.0	289.7
Gross margin (%)	41.6	41.6	41.6	41.6	41.6	41.6
CORE	44.8	46.1	47.4	49.0	51.2	54.2
Gross income	195.0	200.5	206.1	213.2	222.8	235.6
Gross %	33.9	33.9	33.9	33.9	33.9	33.9
SG&A	61.4	58.5	58.8	60.2	63.1	67.3
Taxable income	133.6	142.0	147.3	153.0	159.8	168.3
IBT %	23.2	24.0	24.2	24.3	24.3	24.2
Tax	50.5	53.7	55.8	57.9	60.5	63.7
Net income	83.1	88.2	91.6	95.1	99.3	104.6
NIAT %	14.4	14.9	15.0	15.1	15.1	15.0

Totals may not add due to rounding

EXHIBIT D-3

Present Value Analysis
Worldwide Customer Service
Case 1

	$ Millions					
	1989	1990	1991	1992	1993	1994
Working capital						
- Accounts receivable	(65.6)	(62.5)	(64.3)	(66.5)	(69.5)	(73.4)
- Accounts payable	37.0	43.5	44.7	46.3	48.4	51.1
- Net	(28.6)	(19.0)	(19.5)	(20.2)	(21.1)	(22.3)
- Incremental working capital		9.6	(0.5)	(0.7)	(0.9)	(1.2)
Spares						
- Adds	(42.0)	(51.0)	(46.9)	(60.9)	(75.9)	(57.8)
- Depreciation & scrap	52.0	46.0	46.5	46.9	47.8	52.7
- Incremental spares	10.0	(5.0)	(0.4)	(14.1)	(28.1)	(5.1)
Net income	83.1	88.2	91.6	95.1	99.3	104.6
Net cash flow	93.1	92.8	90.6	80.3	70.2	98.3
Cumulative cash flow	93.1	185.9	276.5	356.8	427.1	525.3
Residual value	XX	XX	XX	XX	XX	521.8
Net present value	677.9					
- Discount rate	10%					

EXHIBIT D-4

Income and Expense
Worldwide Customer Service
Case 2

	$ Millions					
	1989	1990	1991	1992	1993	1994
Revenue	576.0	615.8	657.5	680.3	710.8	751.4
Expenses (total)	336.2	345.6	355.3	367.6	384.1	406.0
- People	171.6	176.4	181.3	187.6	196.0	207.2
- Logistics	119.6	122.9	126.4	130.7	136.6	144.4
- Facility	20.9	21.4	22.0	22.8	23.8	25.2
- Other	24.2	24.9	25.6	26.4	27.6	29.2
Gross margin	239.9	270.2	302.2	312.7	326.7	345.4
Gross margin (%)	41.6	43.9	46.0	46.0	46.0	46.0
CORE	44.8	46.1	47.4	49.0	51.2	54.2
Gross income	195.0	224.2	254.8	263.6	275.5	291.2
Gross %	33.9	36.4	38.8	38.8	38.8	38.8
SG&A	61.4	58.5	58.8	60.2	63.1	67.3
Taxable income	133.6	165.7	196.0	203.4	212.4	223.9
IBT %	23.2	26.9	29.8	29.9	29.9	29.8
Tax	50.5	62.8	74.5	77.3	80.7	85.1
Net income	83.1	102.8	121.6	126.1	131.7	138.8
NIAT %	14.4	16.7	18.5	18.5	18.5	18.5

Totals may not add due to rounding

EXHIBIT D-5

Present Value Analysis
Worldwide Customer Service
Case 2

	$ Millions					
	1989	1990	1991	1992	1993	1994
Working capital						
- Accounts receivable	(65.6)	(65.0)	(69.4)	(71.8)	(75.0)	(79.3)
- Accounts payable	37.0	43.5	44.7	46.3	48.4	51.1
- Net	(28.6)	(21.5)	(24.7)	(25.5)	(26.7)	(28.2)
- Incremental working capital		7.1	(3.2)	(0.9)	(1.1)	(1.5)
Spares						
- Adds	(42.0)	(51.0)	(46.9)	(60.9)	(75.9)	(57.8)
- Depreciation & scrap	52.0	46.0	46.5	46.9	47.8	52.7
- Incremental spares	10.0	(5.0)	(0.4)	(14.1)	(28.1)	(5.1)
Net income	83.1	102.8	121.6	126.1	131.7	138.8
Net cash flow	93.1	104.9	118.0	111.2	102.4	132.2
Cumulative cash flow	93.1	198.0	315.9	427.1	529.6	661.8
Residual value	XX	XX	XX	XX	XX	563.6
Net present value	792.2					
- Discount rate	10%					

EXHIBIT D-6

Income and Expense
Worldwide Customer Service
Case 3

	$ Millions					
	1989	1990	1991	1992	1993	1994
Revenue	576.0	615.8	657.5	680.3	710.8	751.4
Expenses (total)	336.2	340.3	337.2	348.8	364.5	385.3
- People	171.6	171.1	163.2	168.8	176.4	186.5
- Logistics	119.6	122.9	126.4	130.7	136.6	144.4
- Facility	20.9	21.4	22.0	22.8	23.8	25.2
- Other	24.2	24.9	25.6	26.4	27.6	29.2
Gross margin	239.9	275.5	320.4	331.4	346.3	366.1
Gross margin (%)	41.6	44.7	48.7	48.7	48.7	48.7
CORE	44.8	45.8	44.6	46.1	48.2	50.9
Gross income	195.0	229.7	275.8	285.3	298.1	315.1
Gross %	33.9	37.3	41.9	41.9	41.9	41.9
SG&A	61.4	58.5	58.8	60.2	63.1	67.3
Taxable income	133.6	171.2	217.0	225.1	235.0	247.9
IBT %	23.2	27.8	33.0	33.1	33.1	33.0
Tax	50.5	65.0	82.6	85.7	89.5	94.3
Net income	83.1	106.2	134.4	139.4	145.6	153.5
NIAT %	14.4	17.3	20.4	20.5	20.5	20.4

Totals may not add due to rounding

EXHIBIT D-7

Present Value Analysis
Worldwide Customer Service
Case 3

	$ Millions					
	1989	1990	1991	1992	1993	1994
Working capital						
- Accounts receivable	(65.6)	(65.0)	(63.9)	(66.1)	(69.1)	(73.1)
- Accounts payable	37.0	42.9	47.7	49.4	51.6	54.5
- Net	(28.6)	(22.1)	(16.2)	(16.8)	(17.5)	(18.5)
- Incremental working capital		6.5	5.9	(0.6)	(0.8)	(1.0)
Spares						
- Adds	(42.0)	(51.0)	(46.9)	(60.9)	(75.9)	(57.8)
- Depreciation & scrap	52.0	46.0	46.5	46.9	47.8	52.7
- Incremental spares	10.0	(5.0)	(0.4)	(14.1)	(28.1)	(5.1)
Net income	83.1	106.2	134.4	139.4	145.6	153.5
Net cash flow	93.1	107.7	139.9	124.8	116.7	147.4
Cumulative cash flow	93.1	200.8	340.6	465.4	582.1	729.5
Residual value	XX	XX	XX	XX	XX	563.6
Net present value	837.7					
- Discount rate	10%					

Totals may not add due to rounding

EXHIBIT D-8

Income and Expense
Worldwide Hardware Service
Case 1

	$ Millions					
	1989	1990	1991	1992	1993	1994
Revenue	432.2	440.6	448.9	459.9	476.0	498.6
Expenses (incl. CORE)	281.8	286.5	291.1	297.4	306.8	320.5
Gross income	150.4	154.1	157.8	162.5	169.1	178.1
GP %	34.7	34.9	35.1	35.3	35.5	35.7
SG&A	44.4	37.6	38.4	39.7	41.6	44.1
Taxable income	106.0	116.4	119.3	122.8	127.6	134.1
IBT %	24.5	26.4	26.6	26.7	26.8	26.9
Tax	40.3	42.8	44.2	45.5	47.2	49.7
Net income	65.7	69.6	71.8	73.8	76.7	80.6
NIAT %	15.2	15.8	16.0	16.0	16.1	16.2

Totals may not add due to rounding

EXHIBIT D-9

Present Value Analysis
Worldwide Hardware Service
Case 1

	$ Millions					
	1989	1990	1991	1992	1993	1994
Working capital						
- Accounts receivable	(45.6)	(46.5)	(47.4)	(48.5)	(50.2)	(52.6)
- Accounts payable	31.3	31.8	32.3	33.0	34.1	35.6
- Net	(14.3)	(14.7)	(15.0)	(15.5)	(16.1)	(17.0)
- Incremental working capital		(0.4)	(0.4)	(0.5)	(0.6)	(0.9)
Spares						
- Adds	(42.0)	(51.0)	(46.9)	(60.9)	(75.9)	(57.8)
- Depreciation & scrap	52.0	46.0	46.5	46.9	47.8	52.7
- Incremental spares	10.0	(5.0)	(0.4)	(14.1)	(28.1)	(5.1)
Net income	65.7	69.6	71.8	73.8	76.7	80.6
Net cash flow	75.7	64.2	71.0	59.3	47.9	74.6
Cumulative cash flow	75.7	139.9	210.9	270.2	318.1	392.7
Residual value	XX	XX	XX	XX	XX	373.9
Net present value	498.7					
- Discount rate	10%					

Totals may not add due to rounding

EXHIBIT D-10

Income and Expense
Worldwide Hardware Service
Case 2

	$ Millions					
	1989	1990	1991	1992	1993	1994
Revenue	432.2	458.2	484.8	496.7	514.0	538.5
Expenses (incl. CORE)	281.8	286.5	291.1	297.4	306.8	320.5
Gross income	150.4	171.7	193.7	199.3	207.2	218.0
GP %	34.8	37.5	40.0	40.1	40.3	40.5
SG&A	44.4	42.9	42.9	43.6	45.2	47.9
Taxable income	106.0	128.8	150.8	155.8	162.0	170.1
IBT %	24.5	28.1	31.1	31.4	31.5	31.6
Tax	40.3	49.1	57.6	59.5	61.9	65.0
Net income	65.7	79.7	93.3	96.3	100.1	105.1
NIAT %	15.2	17.4	19.3	19.4	19.5	19.5

Totals may not add due to rounding

EXHIBIT D-11

Present Value Analysis
Worldwide Hardware Service
Case 2

	$ Millions					
	1989	1990	1991	1992	1993	1994
Working capital						
- Accounts receivable	(49.2)	(48.4)	(51.2)	(52.4)	(54.3)	(56.8)
- Accounts payable	27.4	31.8	32.3	33.0	34.1	35.6
- Net	(21.8)	(16.5)	(18.8)	(19.4)	(20.2)	(21.2)
- Incremental working capital		5.3	(2.3)	(0.6)	(0.8)	(1.1)
Spares						
- Adds	(42.0)	(51.0)	(46.9)	(60.9)	(75.9)	(57.8)
- Depreciation & scrap	52.0	46.0	46.5	46.9	47.8	52.7
- Incremental spares	10.0	(5.0)	(0.4)	(14.1)	(28.1)	(5.1)
Net income	65.1	79.7	93.3	96.3	100.1	105.1
Net cash flow	75.1	80.0	90.5	81.7	71.2	99.0
Cumulative cash flow	75.1	155.1	245.7	327.3	398.6	497.6
Residual value	XX	XX	XX	XX	XX	403.9
Net present value	586.3					
- Discount rate	10.0%					

Totals may not add due to rounding

EXHIBIT D-12

Income and Expense
Worldwide Hardware Service
Case 3

	$ Millions					
	1989	1990	1991	1992	1993	1994
Revenue	432.2	458.2	484.8	496.7	514.0	538.5
Expenses (incl. CORE)	281.8	282.4	276.3	282.2	291.2	304.1
Gross income	150.4	175.8	208.4	214.5	222.9	234.4
GP %	34.8	38.4	43.0	43.2	43.4	43.5
SG&A	45.3	42.9	42.9	43.6	45.2	47.9
Taxable income	105.1	132.9	165.6	170.9	177.6	186.5
IBT %	24.3	29.0	34.2	34.4	34.6	34.6
Tax	40.0	50.7	63.3	65.3	67.9	71.3
Net income	65.1	82.2	102.3	105.6	109.7	115.2
NIAT %	15.1	17.9	21.1	21.3	21.3	21.3

Totals may not add due to rounding

EXHIBIT D-13

Present Value Analysis
Worldwide Hardware Service
Case 3

	$ Millions					
	1989	1990	1991	1992	1993	1994
Working capital						
- Accounts receivable	(49.2)	(48.4)	(47.1)	(48.3)	(50.0)	(52.4)
- Accounts payable	27.4	31.4	34.5	35.3	36.4	38.0
- Net	(21.8)	(17.0)	(12.6)	(13.0)	(13.6)	(14.3)
- Incremental working capital		4.8	4.4	(0.4)	(0.6)	(0.8)
Spares						
- Adds	(42.0)	(51.0)	(46.9)	(60.9)	(75.9)	(57.8)
- Depreciation & scrap	52.0	46.0	46.5	46.9	47.8	52.7
- Incremental spares	10.0	(5.0)	(0.4)	(14.1)	(28.1)	(5.1)
Net income	65.1	82.2	102.3	105.6	109.7	115.2
Net cash flow	75.1	82.0	106.3	91.1	81.0	109.3
Cumulative cash flow	75.1	157.2	263.5	354.5	435.5	544.9
Residual value	XX	XX	XX	XX	XX	403.9
Net present value	618.1					
- Discount rate	10.0%					

Totals may not add due to rounding

EXHIBIT D-14

Income and Expense
Worldwide Software Support
Case 1

	$ Millions					
	1989	1990	1991	1992	1993	1994
Revenue	143.8	151.5	160.0	170.0	182.2	197.2
Expenses (incl. CORE)	99.2	105.1	111.6	119.3	128.5	139.7
Gross income	44.6	46.4	48.4	50.7	53.7	57.4
GP %	31.0	30.6	30.2	29.8	29.5	29.1
SG&A	17.0	16.8	17.0	17.0	17.8	19.4
Taxable income	27.6	29.7	31.3	33.7	35.8	38.0
IBT %	19.2	19.6	19.6	19.8	19.6	19.3
Tax	10.2	11.0	11.6	12.5	13.2	14.0
Net income	17.4	18.7	19.7	21.2	22.6	24.0
NIAT %	12.1	12.3	12.3	12.5	12.4	12.2

Totals may not add due to rounding

EXHIBIT D-15

Present Value Analysis
Worldwide Software Support
Case 1

	$ Millions					
	1989	1990	1991	1992	1993	1994
Working capital						
- Accounts receivable	(15.2)	(16.0)	(16.9)	(17.9)	(19.2)	(20.8)
- Accounts payable	11.0	11.7	12.4	13.3	14.3	15.5
- Net	(4.2)	(4.3)	(4.5)	(4.7)	(5.0)	(5.3)
- Incremental working capital		(0.2)	(0.2)	(0.2)	(0.3)	(0.3)
Spares						
- Adds						
- Depreciation & scrap						
- Incremental spares						
Net income	17.4	18.7	19.7	21.2	22.6	24.0
Net cash flow	17.4	18.5	19.6	21.0	22.3	23.7
Cumulative cash flow	17.4	35.9	55.5	76.5	98.8	122.5
Residual value	XX	XX	XX	XX	XX	147.9
Net present value	170.9					
- Discount rate	10.0%					

Totals may not add due to rounding

EXHIBIT D-16

Income and Expense
Worldwide Software Support
Case 2

	$ Millions					
	1989	1990	1991	1992	1993	1994
Revenue	143.8	157.6	172.8	183.6	196.8	212.9
Expenses (incl. CORE)	99.2	105.1	111.6	119.3	128.5	139.7
Gross income	44.6	52.5	61.2	64.3	68.2	73.4
GP %	31.0	33.3	35.4	35.0	34.7	34.4
SG&A	16.1	15.5	15.9	16.7	17.8	19.4
Taxable income	28.5	36.9	45.2	47.6	50.4	53.8
IBT %	19.8	23.4	26.2	25.9	25.6	25.3
Tax	10.5	13.8	16.9	17.8	18.8	20.1
Net income	17.9	23.2	28.3	29.8	31.6	33.7
NIAT %	12.4	14.7	16.4	16.2	16.0	15.8

Totals may not add due to rounding

EXHIBIT D-17

Present Value Analysis
Worldwide Software Support
Case 2

	$ Millions					
	1989	1990	1991	1992	1993	1994
Working capital						
- Accounts receivable	(16.5)	(16.6)	(18.2)	(19.4)	(20.8)	(22.5)
- Accounts payable	9.6	11.7	12.4	13.3	14.3	15.5
- Net	(6.7)	(5.0)	(5.8)	(6.1)	(6.5)	(7.0)
- Incremental working capital		1.8	(0.9)	(0.3)	(0.4)	(0.5)
Spares						
- Adds						
- Depreciation & scrap						
- Incremental spares						
Net income	17.9	23.2	28.3	29.8	31.6	33.7
Net cash flow	17.9	24.9	27.4	29.5	31.2	33.2
Cumulative cash flow	17.9	42.9	70.3	99.8	131.0	164.2
Residual value	XX	XX	XX	XX	XX	159.7
Net present value	205.9					
- Discount rate	10.0%					

Totals may not add due to rounding

EXHIBIT D-18

Income and Expense
Worldwide Software Support
Case 3

	$ Millions					
	1989	1990	1991	1992	1993	1994
Revenue	143.8	157.6	172.8	183.6	196.8	212.9
Expenses (incl. CORE)	99.2	103.7	105.4	112.7	121.5	132.2
Gross income	44.6	53.9	67.3	70.9	75.2	80.8
GP %	31.0	34.2	38.9	38.6	38.2	38.0
SG&A	16.1	15.5	15.9	16.7	17.8	19.4
Taxable income	28.5	38.4	51.4	54.2	57.4	61.3
IBT %	19.8	24.4	29.7	29.5	29.2	28.8
Tax	10.5	14.3	19.3	20.4	21.6	23.0
Net income	17.9	24.0	32.1	33.8	35.9	38.3
NIAT %	12.4	15.2	18.6	18.4	18.2	18.0

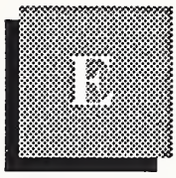
Totals may not add due to rounding

EXHIBIT D-19

Present Value Analysis
Worldwide Software Support
Case 3

	$ Millions					
	1989	1990	1991	1992	1993	1994
Working capital						
- Accounts receivable	(16.4)	(16.6)	(16.8)	(17.8)	(19.1)	(20.7)
- Accounts payable	9.6	11.5	13.2	14.1	15.2	16.5
- Net	(6.7)	(5.1)	(3.6)	(3.8)	(3.9)	(4.2)
- Incremental working capital		1.6	1.5	(0.1)	(0.2)	(0.2)
Spares						
- Adds						
- Depreciation & scrap						
- Incremental spares						
Net income	17.9	24.0	32.1	33.8	35.9	38.3
Net cash flow	17.9	25.7	33.6	33.7	35.7	38.1
Cumulative cash flow	17.9	43.6	77.2	110.8	146.5	184.6
Residual value	XX	XX	XX	XX	XX	159.7
Net present value	219.5					
- Discount rate	10.0%					

Totals may not add due to rounding



Appendix: Measurement/ Management System

Key Measurements

Field*

Contributed margin (customer service) 40%
ROA (parts, equipment, accounts receivable) 40%
Management (customer satisfaction, people management, 20%
(inventory/revenue, training)

Support Centers

Customer satisfaction (software)
Cost/software call
Productivity
Response time
Call closure time

Logistics

Net cash requirements (purchase-scrap-depreciation)
Budget Variance
Spares as a % of product revenue
% shipments within 24 hours
% bad parts in pipeline

* Americas. In France, the country Customer Service Manager is also measured on overall gross margin.

Key Concerns

- Optimizing on service rather than on Prime all the way to branch level.

- Lack of 100% Time Reporting System results in no focus on:

  - CSR time utilization
  - Inaccurate data or nonexistent data on product installation and service costs
  - Profitability by product

- Lack of product management concept to measure or transfer warranty, software support costs, installation and engineering change costs back to those responsible.*

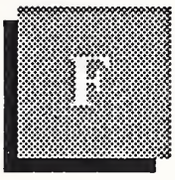
- Lack of parts availability measurement at the regional and branch office level.

  - Recent shift from a push to a pull logistics system
  - 40% of calls require a second trip to the customer

- Lack of focus on productivity.

  - Backlog/CSR
  - Calls/CSR

* A flat 3.3% of the purchase price is transferred to Service on Computervision products, but does not address the problem.



Appendix: Hardware Contracts/ Offerings

Hardware Warranties

- 90-day return to factory warranty standard
- 90-day or one-year billing waiver for on-site during warranty on certain products if customer signs up for a one-year or three-year preferred service agreement.*
- Germany has extended warranty to one year on-site.

Hardware Maintenance

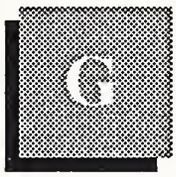
- Four major options
  - BASIC Service (next day)
  - Preferred Service (2-4 hour response)
  - Premium (5 day, 24-hour coverage)
  - Premium Plus (7 day, 24-hour coverage)

Concerns/Opportunities

- 90-day return to factory warranty below industry norm.
- Lack of warranty charge back to product results in 25% to 33% discount on hardware service.
- Question real need for basic service option.
  - Little cost justification
  - Discount questionable in light of competition

- A TPM revenue and profit opportunity exists to maintain Sun Microsystems hardware. Prime has the skills, the parts, the repair facility, and the documentation required to enter this market.

* Prime EXL customers are eligible for a waiver if they sign up for the BASIC agreement.



Appendix: Software Contracts/ Offerings

Software Licenses

General Purpose Systems

- Up-front license fee includes installation assistance, acceptance testing, 90-day warranty and documentation. Updates and revisions not included.

CAD/CAM

- Up-front license fee plus monthly use fee. Includes installation assistance, acceptance testing, 90-day warranty, documentation, on-site and telephone support, maintenance revisions, and new function releases.

Software Support

General Purpose Systems

- Three major options
  - BASIC Software Service (telephone support and license update service)
  - Preferred Software Service (basic plus on-site support)
  - License Update Service

CAD/CAM

- Full support under the monthly license fee

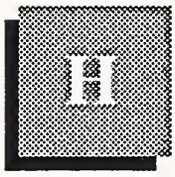
Software Strategy

- Separately price new function in new releases
- Move to the CAD/CAM approach of up-front plus monthly use fee

- Offer monthly use under three options similar to the General Purpose systems

Concerns/Opportunities

- Should move to up-front plus monthly license fee approach
- Should separately price new function
- Question need or wisdom of offering three options
  - Will reduce revenue and profit
  - Percent of problems solved via telephone support will increase over time
  - Limits capability to solve customer problems early
  - Recommend full support under a monthly license fee



Appendix: Accounts Receivable

- Accounts Receivable responsibility centralized under F&A Management.

- Americas: 41 Days Sales Outstanding
  Worldwide: 52 Days Sales Outstanding

- Americas 20% of accounts receivable over 90 days old.

- Active Not Billed and Installed Not Billed totaled $4.3 million at the end of June (Americas only).

- Americas write-offs were:

  - 1st Quarter—.4 of 1% of Net Sales.
  - 2nd Quarter—.9 of 1% of Net Sales.

  The Customer Service I&E is charged at a 1.5% rate however, and corporate retains the difference.

Conclusion:

- Improvement in accounts receivable is possible through more direct service management involvement, particularly in Europe.

I

Appendix: Pricing

- Almost no TPM competition in U.S. or Europe. Concern exists on Sun platform. Parts and documentation on other products not available to third-party maintainers.
- Contract cancellations low, and time-and-materials is only 1% of revenue.
- Cost of ownership pressure on new products being marketed, but not significant.
- Product maintenance cost data not available.
- New products are pattern priced, or incrementally, based on cost estimates.
- Price Change History*

	USA	Non-USA
1988	5%	14%
1989	7%	6%

* No price changes to distributors.

- Price sensitivity less in software support, but customer satisfaction is a problem.
  - CAD/CAM: worldwide
  - General Purpose: Europe
- General Purpose customers protected for first year from price increases. Prices usually changed in January.

- Computervision customers' prices can only be changed on the renewal date of the contract.

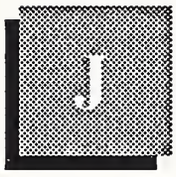
Conclusion

Additional price increases are possible!

Recommend:

- General Purpose hardware maintenance now—5%
- CAD/CAM hardware maintenance additional 5% at renewal
- General Purpose software support (USA) now—7%
- General Purpose software support (non-USA) later*—7%
- CAD/CAM software support (worldwide) later*—7%

* Later = after software support has been improved.



Appendix: Remote Support

Prime Technical Support Center (TSC) (Milford)

- Primary mission U.S. support
- Single point of contact 800#
- Dispatching CSR (Hardware)
- Software support (Levels 1 & 2) General Systems
- Internal branch offices
- Problem Management System
- Data Collection System (not 100%)
- Key strategies
  - Remote diagnostic capabilities
  - Customers on-line to Problem Data Base

CAD/CAM Software Services (Milford, U.K., Japan)

- Worldwide support
- Software support (Levels 1 & 2) CAD/CAM
- Software engineering (Level 3)
- SINFLO (known Problem Data Base and Keyword geared)

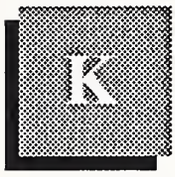
- SPT—Software Problem Tracking system

Interface to Remote Support

- Americas—Customer
- International—Prime personnel

Conclusions

- Worldwide support mission needed for General Systems
- TSC strategies should be extended to CAD/CAM
- Efficiencies possible by merging TSC and CAD/CAM software services



Appendix: Logistics

- Responsibility for all logistics being consolidated worldwide.
  - Reports to Manufacturing
  - Logistics costs transferred to Service
  - European Logistics Center (ELC) Amsterdam —Irish subsidiary
  - Mission is inventory management and parts repair
- $260M gross inventory value

  $133.9M net book value

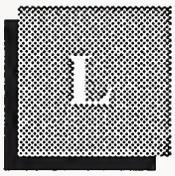
  $97.4M total 1989 budget

  $40.9M depreciation (60 months)

  $40M parts repair
- Worldwide Inventory Management Systems (SIMS)
- Strategies
  - Moving from push to pull inventory management
  - Consolidation of inventory responsibility worldwide
  - Key focus on net cash requirements
- No parts availability measurements at the branch and region levels.

Conclusions

- Operation appears to be well-managed
- Strategy is good
- Need parts availability measurements



Appendix: Organization/Mission

Opportunities/Concerns

- Question need for East/West operations in the U.S. function.
- Levels 1 and 2 General Systems software support mission for non-U.S. should be clearly assigned to the TSC group.
- Levels 1 and 2 software support for CAD/CAM and General Systems should be merged.
  - Efficiency in overhead, information systems, customer access to data, problem management, etc.
- Geographic symmetry and shared facilities with sales should be put in place at the region level and, if possible, at the branch office level.
- Logistics should be moved from Manufacturing to Core Services.
- Level 3 CAD/CAM software support should be moved back to Manufacturing/Engineering if a separation strategy is pursued.
- Efficiencies may be possible by merging pre-sale, post-sale and consulting software skills, particularly in the Computervision product area.